

WHAT IS CLAIMED IS:

1. A medical device for delivering a therapeutic agent to an internal portion of a patient's body, the medical device comprising:

a shaft;

a self-expanding delivery member in operative communication with the shaft, the delivery member having a proximal end and a distal end and being shaped in a generally solid cylindrical configuration from a porous material capable of (i) releasing the therapeutic agent to the internal portion of the patient's body and (ii) being in a collapsed state;

a therapeutic agent delivery lumen defined by a lumen wall, wherein the therapeutic agent delivery lumen is in fluid communication with the delivery member for fluidly connecting the delivery member with a therapeutic agent source; and

a retention member in operative communication with the delivery member, the retention member being configured and arranged to selectively collapse the delivery member;

wherein:

the lumen wall has one or more delivery openings therein for passage of the therapeutic agent therethrough; and

the delivery member is disposed around and in contact with at least a portion of the lumen wall and in contact with at least one of the delivery openings.

2. The medical device of claim 1, wherein:

the delivery openings are disposed according to a pre-determined spaced-apart relationship with respect to each other.

3. The medical device of claim 1, further comprising a distal end cap disposed at the distal end of the delivery member, the distal end cap at least partially sealing the distal end of the delivery member.

4. The medical device of claim 1, further comprising a proximal end cap disposed at the proximal end of the delivery member, the proximal end cap at least partially sealing the proximal end of the delivery member.

5. The medical device of claim 1, wherein the proximal end of the delivery member has a tapered configuration when the delivery member is in an expanded condition.

6. The medical device of claim 1, wherein the distal end of the delivery member has a tapered configuration when the delivery member is in an expanded condition.

7. The medical device of claim 1, further comprising:

an inflatable member operatively connected to the shaft; and  
a fluid delivery lumen in fluid communication with the inflatable member for  
delivering an inflation fluid to the inflatable member.

8. The medical device of claim 1, wherein the delivery member is shaped from a self-expanding material that is configured and sized to contact at least a portion of a target body lumen when the delivery member is in an expanded state.

9. The medical device of claim 8, wherein the delivery member is configured and sized to self-expand to at least partially conform to the internal contour of the target body lumen when the delivery member is in an expanded state.

10. The medical device of claim 1, wherein the retention member is a sheath configured and arranged to selectively extend at least partially around the delivery member.

11. The medical device of claim 1, wherein the delivery member is formed of carboxymethyl cellulose, polyacrylic acid, carboxymethyl starch, chitosan, potassium polymetaphosphates, polyethylene, nylon, polyurethane, PEBAX, silicone, alginate, cotton, polymers cross-linked during phase transition, collagen foams, PLA, PLGA, or PGA.

12. The medical device of claim 1, wherein the distal end cap is formed of polyisobutylene-styrene block copolymers, silicones, PTFE (fluorinated hydrocarbons), PEBAX, polyurethane, polyethylene, and nylons.

13. The medical device of claim 1, wherein the delivery member is in the form of a separate cartridge that is configured to be attached to the medical device prior to delivery of a therapeutic agent.

14. The medical device of claim 1, wherein the delivery member is configured to be selectively releasable from the medical device.

15. The medical device of claim 1, wherein the porous material is degradable.

16. The medical device of claim 1, wherein the delivery member is selectively releasable from the medical device.

17. The medical device of claim 1, wherein the delivery member is capable of being attached to the medical device by a user of the medical device.

18. The medical device of claim 17, further comprising hooks on the shaft and the delivery lumen, the delivery member being attached to the shaft and the delivery lumen by the hooks, wherein the hooks may be actuated to selectively release the delivery member from the medical device.

19. A medical device for delivering a therapeutic agent to an internal portion of a patient's body, the medical device comprising:

a shaft;

a self-expanding delivery member in operative communication with the shaft, the delivery member having a proximal end and a distal end and being shaped from a porous material capable of (i) releasing the therapeutic agent to the internal portion of the patient's body and (ii) being in a collapsed state;

a therapeutic agent delivery lumen in fluid communication with the delivery member for fluidly connecting the delivery member with a therapeutic agent source; and

a retention member in operative communication with the delivery member, the retention member being configured and arranged to selectively collapse the delivery member;

wherein:

the delivery member, when in an expanded condition, forms a longitudinal conduit having an inner wall, the conduit being configured to allow a body fluid to pass through the conduit; and

the delivery member is selectively releasable from the medical device.

20. The medical device of claim 19, wherein the delivery member has a generally tubular configuration when the delivery member is in an expanded condition.

21. The medical device of claim 19, wherein at least a portion of the inner wall of the longitudinal conduit is sealed to at least inhibit the flow of either the therapeutic agent or a body fluid, or both, through the inner wall.

22. The medical device of claim 19, wherein at least a portion of the inner wall of the longitudinal conduit is sealed to at least inhibit a body fluid from flowing through the inner wall.

23. The medical device of claim 19, further comprising hooks on the shaft and the delivery lumen, the delivery member being attached to the shaft and the delivery lumen by the hooks, wherein the hooks may be actuated to selectively release the delivery member from the medical device.

24. The medical device of claim 19, wherein the delivery member is capable of being attached to the medical device by a user of the medical device.

25. A medical device for delivering a therapeutic agent to an internal portion of a patient's body, the medical device comprising:

a shaft;

a self-expanding delivery member in operative communication with the shaft, the delivery member having a proximal end and a distal end and being shaped in a generally

solid cylindrical configuration from a porous material capable of (i) releasing the therapeutic agent to the internal portion of the patient's body and (ii) being in a collapsed state;

a therapeutic agent delivery lumen defined by a lumen wall, wherein the therapeutic agent delivery lumen is in fluid communication with the delivery member for fluidly connecting the delivery member with a therapeutic agent source; and

a retention member in operative communication with the delivery member, the retention member being configured and arranged to selectively collapse the delivery member;

wherein:

negative pressure can be applied through the therapeutic agent delivery lumen to remove fluid from the delivery member.

26. The medical device of claim 25, wherein the therapeutic agent source is a Luer syringe.

27. The medical device of claim 26, wherein the Luer syringe is the source of the negative pressure.